



County of Dare

Department of Health & Human Services

P.O. Box 669 | Manteo, North Carolina 27954

Health 252.475.5003 | Social Services 252.475.5500

August 13, 2018

Mr. Michael Robinson, P.E., P.L.S.
Engineering and Surveying
PO Box 2852
Kill Devil Hills, NC 27948

Re: Town of Southern Shores Volunteer Fire Department

Dear Mr. Robinson,

I have reviewed the preliminary design and layout of the proposed on-site wastewater system for the above mentioned property (Project #100217). I have determined the proposed 900 gpd maximum daily flow rate and the wastewater system components are adequate for the facility. As discussed, engineering is ongoing at this time for wastewater tanks and the concrete that will cover them. Our review will continue as needed until the wastewater system is under permit.

Please be aware the existing wastewater system will have to be properly abandoned when the existing building is decommissioned.

If you have any questions, please contact me at jackf@darenc.com or 252-475-5054.

Sincerely,

Jack Flythe
Environmental Health Supervisor

E-Z TREAT, INC.

Michael Robinson, P.E., P.L.S.
PO BOX 2852
Kill Devil Hills, NC 27948

RE: Southern Shores Fire Dept., Dare County, NC

August 12, 2018

I have reviewed the proposed plans for the 2 Model 600, EZ TREAT pods. EZ TREAT, INC. certifies the equipment designed will meet the performance standard listed below. The system must be installed and maintained by an EZ TREAT, INC. certified installer. In addition, the system must be operated and maintained by an EZ TREAT, Inc. certified operator, within the Manufacturer's guidelines.

Influent

BOD 5 <300 mg/l
TSS <200 mg/l
TKN <100 mg/l

Effluent TS II

CBOD5 <10 mg/l
TSS <10 mg/l
NH3 <10 mg/l
TN <20 mg/l or >60% Reduction
Fecal Coliform <1,000 cfu

Design Flow: 820 gpd

The certification is in accordance with the parameters listed above. The system is designed for residential use and does not assume other environmental factors, such as but not limited to: FOG, cleaners, floor strippers, antibiotics, Chemotherapy agents, non-biodegradable substances, ETC. That may affect the system's performance. Alkalinity supplementation may be needed in some circumstances.

Sincerely,
Michael Stidham, VP
703-408-2916



4114 Laurel Ridge Drive
Raleigh, North Carolina 27612

Protocol Sampling Service, Inc.
"Experts in Environmental Compliance"

(919) 210-6547

Protocolsampling@yahoo.com
Environmentalservicesnc.com

August 10, 2018

Mr. Mike W. Robinson, P. E.
Engineering and Surveying
Post Office Box 2852
Kill Devil Hills, North Carolina 27948

Re: Soil Inspection – 15 South Dogwood Trail
Town of Southern Shores Volunteer Fire Department
Southern Shores, Dare County, North Carolina
Protocol Project No. 18-97

Dear Mr. Robinson:

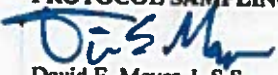
The subject property that will be re-developed for a new headquarters for the Town of Southern Shores Volunteer Fire Department was inspected by Protocol Sampling Service, Inc., personnel on Wednesday, August 8, 2018. Protocol personnel inspected the lot by advancing two (2) soil borings for lithologic descriptions, depth to the seasonal high water table, if evident, and the depth to static water table across the proposed disposal area (Site Map – attached).

The site currently houses the Town of Southern Shores Volunteer Fire Department building and was found to be convex in shape, with slopes between 0-3 percent. The eastern portion of the property adjacent to South Dogwood Trail comprises the study area and contains elevations of 6.0 to 7.0 feet msl. The seasonal high water table was found at 48 inches below land surface and the static water table was found at a depth of 42 inches below the soil surface across the study area due to the effect of over 18-inches of local rainfall in the past two weeks. The soil profile exhibited excellent structure (single-grained), consistence (loose) and texture (fine sand) and should be considered suitable for a EZ-Treat pretreatment active and repair system. The long-term acceptance rate (LTAR) should not exceed 1.2 gallons-per-day-per-square-foot (gpd/ft²) with a 40% bed area reduction per 1970 (j)3(B) for the active system and 1.2 gpd/ft² with a 2.0 factor per 1970(f)2 for the repair drip system. No fill will be required for the cap in the active system area. The proposed repair drip disposal areas were under asphalt at the time of the inspection. These areas should be inspected prior to any disposal system installation if needed in the future.

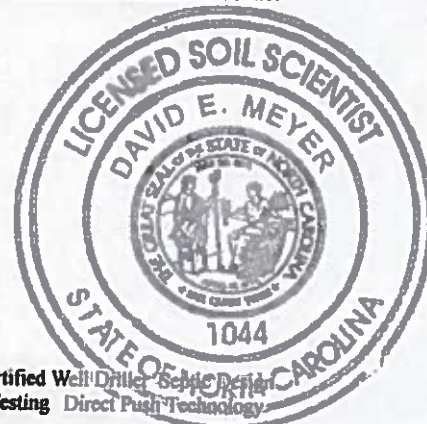
Conclusions and recommendations of this report are based on best available data, collected within budgetary constraints of the proposal. It is the premise of this effort that the information collected and analyzed is representative of a reasonable effort to understand an existing problem. No guarantee is expressed or implied that new or additional data will not be required at a later time. The findings presented herein represent Protocol Sampling Service, Inc.'s professional opinion based on our site and soils evaluation and knowledge of the current laws and rules governing on-site wastewater systems in North Carolina. The Dare County Health Department must make final approval of the subsurface discharge system. Any concurrence with the findings of this report would be made at that time.

Please call me at (919) 210-6547 if you have any questions or comments.

Sincerely,
PROTOCOL SAMPLING SERVICE, INC.


David E. Meyer, L.S.S.
President

cc: file



NC Licensed Soil Scientist NC Licensed Well Contractor NGWA Certified Well Driller
Monitor Well Installation Water Well Rehabilitation/Abandonment/Testing Direct Push Technology

4" CLIF
1.5" ABOVE FC

4" DUF
1.5" ABOVE FD

RIGHT OF WAY

Soil Bot 1
Alt 48"
42"

DRIP IRRIGATION
REPAIR AREA 3
AREA = 45 sq. ft.

Soil Profile Description
Southern Shores Volunteer Fire Department – Profile 1 - Active

- A 0 – 20 inches; yellowish brown (10YR 5/6) fine sand; single grained; loose.
- C1 20 – 36 inches; pale brown (10YR 5/3) fine sand; single grained; loose.
- C2 36 – 48 inches; very pale brown (10YR 7/3) fine sand; single grained; loose.
- C3 48 – 72+ inches; light gray (10YR 7/2) fine sand; single grained; loose.

Soil Series: Fripp

Landscape: Coastal Plain

Landform: low dune

Parent Material: Marine sediments

Drainage Class: well to excessively well

Particle Size Class: sandy

Temperature Regime: thermic

Subgroup Classification: Typic Quartzipsamments

Examination Method: auger boring

Date: August 8, 2018

Weather: Sunny, 85°

Investigators: David Meyer

Shwt: 48"

Measured water table depth: 42" (20"+ rain in past 14 days)